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led to the devising of a cabinet and means of storing slides which has proved, in actual experience of a year, to be thoroughly satisfactory in every particular. To enable the slide to be stored as one would an index card a special envelope or jacket for the slide was devised. It is made of strong manilla paper and but little larger than the standard slide size ( $1 \times 3$  in.). This jacket is given the dimensions of  $3\frac{1}{4} \times 1\frac{1}{4}$  in., and was manufactured in quantity at a cost of about two dollars a thousand. The jacket affords an opportunity for sufficient labeling, and enables the slide to be classified in a specially constructed cabinet exactly as one would an index card. The cabinet follows the general plan of the library index case, is of five drawers of three partitions each, and will hold upwards of 2,000 slides. The guide cards are specially cut to correspond with the slide envelope, and have on the lower edge an extended lip perforated for the countersunk retaining rod which runs just below the level of the slides. This holds the guide cards and gives additional security to the slides, which remain readily in place by their own weight. Each cabinet is arranged with a lock which fastens all five drawers and gives security to the material. The drawers have the retaining device so that there is no danger of their being pulled entirely out and their contents spilled. The envelopes, however, give such protection to the slides that they will not break even from falling some distance, and, furthermore, protect them entirely from dust.

This system of storing slides allows for additions to be made indefinitely, just as in the case of the card catalogue, and enables the most minute and accurate subdivisions and classification of material, especially important where so large a number of subjects are being accumulated and studied as is indicated above. The adoption of this system of filing slides has decreased the work of consultation and handling material at least two thirds, and has rendered such consultation and handling so easy that the whole collection is more often consulted and correspondingly much more serviceable than before. These cabinets, while specially made, are inexpensive, and seem to have

solved the problem, at least so far as permanent balsam slide mounts are concerned. In the writer's own preparation of material in his special subject the slides are always thoroughly dried over an alcohol flame as soon as they are prepared. In the case of mounts which can not be thus dried this system will not apply, for the slides can not be placed in such cabinet until they have become thoroughly dried. Once thoroughly dried, however, the intense heat of a Washington summer does not result in any softening or attachment to the enclosed jacket. This system of keeping slides has met with the general approval of all who have seen it, and it seems, therefore, desirable to give it this exploitation for the benefit of those working with similar material.

C. L. MARLATT.

U. S. DEPARTMENT OF AGRICULTURE,  
December 7, 1904.

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#### QUOTATIONS.

##### CONVOCATION WEEK AT THE UNIVERSITY OF PENNSYLVANIA.

THE American Association for the Advancement of Science held its first meeting in Philadelphia in 1848. After an interval of thirty-six years it met for the second time in Philadelphia in 1884, when the attendance was 1,261. This was the largest meeting in the history of the association, but the numbers were increased by 303 members of the British Association, which met that year in Canada. At the Boston meeting of 1880 there were 997 and at the Montreal meeting of 1882 there were 937 members in attendance. These meetings represent a culminating point in the history of the association, and an important epoch in the development of science. Until 1882 there were only two sections of the association, one for the exact sciences and one for the natural sciences. But at about this period specialization and differentiation became imperative. The conditions were in part met by dividing the association into sections, but more adequately by the establishment of special societies. The American Society of Naturalists was organized in 1883, and has since held winter meetings, the membership being confined to professional students

of the natural sciences. The American Chemical Society had been established in 1876; the Geological and Mathematical Societies were organized in 1888. Since that time special societies have been founded for all the leading sciences, and there is a tendency for them to divide into branches for the different sections of the country.

The establishment of these special societies represents an important advance, but its first effect was to weaken the parent association. Professional men of science found the amateur element too prominent in the summer meeting and the time was inconvenient for many of them. In spite of the great increase in the numbers of scientific men in the country, the meetings became smaller and the membership decreased. But this was only a temporary phase. The interests of men of science are not exactly limited by the conventional bounds of a single science. A zoologist, for example, may be interested in anatomy, physiology, pathology, paleontology, geography, botany, psychology, chemistry or some other science. It is also the case that those who attend the annual meetings like to see their friends from other parts of the country who may be working in fields remote from their own. It is advantageous consequently for the special societies to meet in groups at times, even though they may like occasionally to be isolated, and some machinery is necessary to make local arrangement to secure reduced railway fares and the like.

Then while a small group of experts is the ideal condition for the presentation and discussion of special research, there are wider aspects of science and interrelations between the sciences for the adequate consideration of which workers in different departments must come together. There are also conditions of scientific progress, such as educational methods, scientific institutions, publication, government activities, etc., that need criticism and control. Neither trades unions nor corporations meet with universal approval at the present time, but it is obvious that some union among men of science is desirable for the support of their common interests, which in this case are fortunately identical with the inter-

ests of society. Lastly a federation of societies and a large gathering of scientific men is an important factor in keeping scientific work in touch with the outside world and in impressing on it the unity and weight of scientific research.

The complicated conditions appear to have been met by the establishment of 'convocation week' at the end of the Christmas holidays. Under the general auspices of the American Association arrangements are made at some large center for the meeting of the association and of the special societies that care to join with it. The special societies have complete control of their place and time of meeting, of their programs and membership; but without interfering with their autonomy the advantages of a great gathering of scientific men are assured. Thus at Philadelphia, beginning the day after Christmas, there will meet the American Association and its ten sections; the American Society of Naturalists, and some twenty special societies, including those devoted to astronomy, physics, chemistry, geology, botany, zoology, paleontology, bacteriology, physiology, anatomy, anthropology, psychology and philosophy.

The societies are fortunate in their place of meeting this year. Philadelphia is centrally situated, at least for the Atlantic seaboard. The city is noted for its scientific societies and institutions. The University of Pennsylvania is one of the great universities which can offer admirable accommodations to all the societies and at the same time much to interest all men of science. Houston Hall, the beautiful club house of the students, will be an admirable center for social intercourse. The magnificent new medical laboratories will not only give excellent places of meeting for the societies devoted to the biological sciences, but a visit to them would repay a trip from Boston or even Chicago. Each group of scientific men will find something to interest them in the advances made by the university during the ten years of Provost Harrison's administration. These include the laboratories of physics and of chemistry, the engineering hall, the observatory, the botanical garden, the vivarium and the museums, to mention only

certain of the developments connected with the natural and exact sciences.—*The Popular Science Monthly*.

#### COMPULSORY GREEK AT OXFORD AND CAMBRIDGE.

THE discussion of the 'Greek question' by the resident members of Oxford and Cambridge has disclosed so many contradictory views that the average member of Convocation, in despair of definite guidance, may feel inclined to leave things as they are till the experts have made up their minds as to what they want, and why they want it. The limited proposals before 'Congregation' at Oxford were criticized partly because they went too far, partly for not going far enough—the latter, as we gather, being the view of their most formidable opponent, Sir William Anson, as it was of many half-hearted supporters. With all respect, indeed, to the weighty authority of the Cambridge Professor of Greek, Sir Richard Jebb, we can not follow his argument that the adverse vote at Oxford on a smaller proposal made it highly improbable that, whatever Cambridge might do, Oxford would consent to make Greek optional for all candidates for a degree. On the contrary, we are inclined to think that a bolder and more comprehensive proposal would have had a better chance at Oxford than one which raised a great and far-reaching question upon a comparatively small issue; and that Cambridge, if she goes full steam ahead, need not fear being left in the lurch by Oxford, with the result that, as Sir Richard Jebb seemed to fear, the University which retains more Greek will attract the ablest literary talent. The Master of Trinity, Dr. Montague Butler, a classical scholar of the first rank and a teacher of proved experience, regards such gloomy forecasts as baseless, and wholly dissents from Sir Richard Jebb's view that to make Greek optional would be a serious blow to the interests of the highest liberal education in England and throughout the empire. Who, indeed shall decide when such doctors disagree? It is evident, too, from the debates at either university that many who advocate the change do so in the interest of the same liberal education which its opponents think will be im-

perilled. They foresee danger if the universities continue to stand too fixedly upon the old ways, making no attempt to readjust their requirements to new conditions and to enlarged views of what constitutes a liberal education.—*The London Times*.

#### NOTES ON ENTOMOLOGY.

PROFESSOR A. P. MORSE has published the first entomological paper under the Carnegie Institution of Washington.\* The greater part of the work is occupied by a list of the species taken (ninety in number), with notes on occurrence, habits, variations, etc. Before this systematic list there is some very interesting ethological matter comprising a classification of grasshoppers according to habitat, and an explanation of brachypterism in orthoptera. The classification by habitat is first into geophilous and phytophilous divisions, each divided into campestrian and sylvan groups, and the campestrian into xerophile and hydrophile societies. He finds an explanation of brachypterism in the fact that these species 'dwell in an environment of more or less dense, intricate, interlacing vegetal growth, \* \* \* or in burrows, crevices, etc.' The excellent plates illustrate the habitats of various species.

Dr. R. W. Hoffmann has published a very interesting article on the morphology and physiology of certain parts of springtails.† He has studied particularly the structure and histology of the ventral tube of these tiny creatures; an organ not found elsewhere in insects, and whose function has never been well understood. Some have believed it to be an organ of generation, others considered it a breathing organ, or an organ to take up water, others thought it an organ of secretion, and still others as used to hold the end of the furcula. Many, however, have thought it was

\* 'Researches on North American Acridiidae.' Publ. no. 18, Carnegie Inst. Wash., Oct., 1904, pp. 55, 8 pls., 13 text figures.

† 'Über den Ventraltubus von *Tomocerus plumbeus* L. und seine Beziehungen zu den grossen unteren Kofdrüsen. Ein Beitrag zur Kenntniss der Collembolen.' *Zool. Anz.*, XXVIII., 1904, pp. 87-116.